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BY HAND DELIVERY

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

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Federal Communications Commission
Office of Secretary

**Re: Notice of Ex Parte Presentation
IB Docket No. 96-220**

Dear Mr. Caton:

Pursuant to Section 1.1206 of Commission's Rules, it is hereby noted that on April 2, 1997, GE Starsys Global Positioning, Inc. ("Starsys") met with Harold Ng, Cassandra Thomas, Paula Ford, Julie Garcia, and Dan Connors of the Satellite and Radiocommunication Division of the International Bureau. Present on behalf of Starsys were Alan Renshaw, Ken Newcomer, and myself. At the meeting GE Starsys provided copies of the attached presentation material. Also present at the meeting were representatives of Leo One USA Corporation. ("Leo One"), who will be filing a separate ex parte notice with copies of their own presentation material.

An original and one copy of this notice are being submitted to the Secretary's office. Copies of this letter also are being provided to the staff who attended the meeting, as well as other interested parties as identified below.

Respectfully submitted,



Peter A. Rohrbach
Counsel for GE Starsys Global
Positioning, Inc.

Enclosures

cc: Second Round NVNG MSS Applicants
Thomas Tycz, FCC
William Hatch, NTIA
Frank Eng, NOAA
Nelson Pollack, Air Force



Two-Way Remote Positioning and Messaging Services

GE STARSYS

**137-138 MHz BAND SHARING CRITERIA
AND IMPACTS**

OF

SECOND ROUND LICENSING

GE STARSYS
2 APRIL 1997



Two-Way Remote Positioning and Messaging Services

137-138 MHz BAND SHARING

- **137-138 MHz BAND SHARING ASSUMPTIONS:**

1. Maximum of Four FDMA feederlinks authorized in the primary allocation area of the 137-138 MHz band using 50 kHz "NOAA channels" based on Orbcomm feederlink criteria:
 - 8 dBW e.i.r.p. at satellite, 775 km altitude
2. Multiple satellites using one feederlink channel operate TDMA with effect of one signal power
3. One additional SSMA signal authorized in 137-138 MHz band
 - using no more than GE Starsys pfd: - 156.1 dB(W/m²/4/kHz)
4. No restrictions on feederlinks, service links in secondary allocation areas of 137-138 MHz band
5. Any FDMA service links in primary allocation area requires trade-off with feederlinks based on power and location of channels
6. GE Starsys operates with low sidelobe ground station antenna similar to that of Orbcomm
 - up to 25.5 degree half-beam width
7. Total second round systems interference limited to 1/3 of Starsys link margin



Two-Way Remote Positioning and Messaging Services

SHARING SCENARIOS & IMPACTS

- **STAGE 1: NOAA REMAINS IN CURRENT CHANNELS IN 137-138 MHz BAND**
 - Second round FDMA systems operate feederlinks at 8 dBW e.i.r.p. (computed at 775 km) in NOAA “channels” when not in Starsys main beam
 - systems use TDMA techniques equating to single transmissions per feederlink channel
 - feederlink channels are RHCP
 - Second round (FDMA & SSMA) systems stop transmitting when in Starsys main beam
 - GE Starsys limited to original power (- 156.1 dB(W/m²/4/kHz) while NOAA in center of band
 - link margin as filed: 2.3 dB
 - Additional SSMA system operates at same pfd at ground as Starsys



STAGE 1: IMPACT

Two-Way Remote Positioning and Messaging Services

- **IMPACTS ON STARSYS:**

- 2nd Round FDMA, Orbcomm
& E-SAT in sidelobes:

.82 dB margin degrade = 36% loss
all in sidelobes is optimum condition

- Orbcomm in main beam:

2.66 dB margin degrade
100% loss of margin + some capacity
new antenna = 18% of time in main beam (3x)

- 2 12.5 dBW service links:

@ 137.35 MHz

1.2 dB margin degrade

@ 137.77 MHz

0.96 dB margin degrade



Two-Way Remote Positioning and Messaging Services

SHARING SCENARIOS & IMPACTS

- **STAGE 2: NOAA MOVES TO SIDES OF 137-138 MHz BAND**

- GE Starsys increases power by 3 dB
- link margin increases to 2.9 dB

- **IMPACTS ON STARSYS:**

- 2nd Round & Orbcomm in sidelobes: .49 dB margin degrade = 17% loss of margin
all in sidelobes is optimum condition
- 137.5 MHz channel transmits in main beam at 5 dBW: 1.1 dB margin degrade = 38% loss of margin
- must shut down in main beam
- Other three channels transmit at 5 dBW in main beam: .75 to .91 dB degrade = 26 to 31% loss
- Orbcomm in main beam: 1.72 dB degrade = 75% loss of margin



Two-Way Remote Positioning and Messaging Services

SERVICE LINKS VS. FEEDERLINKS

- **AFTER NOAA MOVES TO SIDES OF BAND**

2 12.5 dBW service links in sidelobes

replace one "NOAA channel"

@ 137.35 MHz (indiv)

0.73 dB degrade = 25 % margin loss

@ 137.77 MHz (indiv)

0.20 dB degrade = 20 % margin loss

4 service links simultaneously

0.80 dB degrade = 29 % margin loss

@ 137.62 MHz added

1.06 dB degrade = 37 % margin loss

5 service links simultaneously

0.90 dB degrade = 31 % margin loss